

ABSTRACT OF THE DISCLOSURE

A supersensitive nuclear magnetic resonance imaging apparatus includes a superconducting magnet, a gradient magnetic field coil, a high frequency emitting coil, and a receiving coil, wherein a biosample, including at least one of cells, organic tissues, and laboratory small animals, is inserted in a sample chamber of generally 1 to 30 mm in diameter. The superconducting magnet is formed of laterally divided split magnets, and the direction of the magnetic field generated by the magnet is generally horizontal. The receiving coil is in the form of a solenoid coil, and the biosample is inserted from a direction orthogonal to the direction of the magnetic field in a generally vertical direction. The spatial resolution in imaging of the biosample is not more than one-tenth of a cell that forms the biosample.